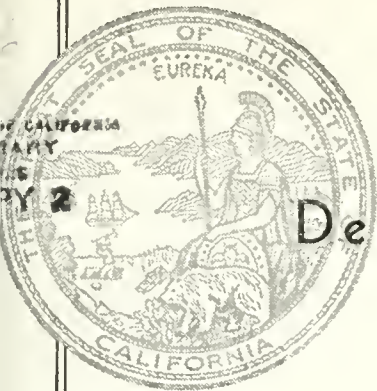


TC
824
C2
A2
no. 119:6

LIBRARY
UNIVERSITY OF CALIFORNIA
DAVIS

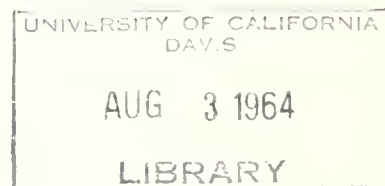


THE RESOURCES AGENCY OF CALIFORNIA
Department of Water Resources

BULLETIN No. 119-6

FEASIBILITY OF SERVING
THE SAN GABRIEL VALLEY
MUNICIPAL WATER DISTRICT
FROM THE STATE WATER PROJECT

MAY 1964



HUGO FISHER
Administrator
The Resources Agency of California

EDMUND G. BROWN
Governor
State of California

WILLIAM E. WARNE
Director
Department of Water Resources

State of California
THE RESOURCES AGENCY OF CALIFORNIA
Department of Water Resources

BULLETIN No. 119-6

FEASIBILITY OF SERVING
THE SAN GABRIEL VALLEY
MUNICIPAL WATER DISTRICT
FROM THE STATE WATER PROJECT

MAY 1964

HUGO FISHER
Administrator
The Resources Agency of California

EDMUND G. BROWN
Governor
State of California

WILLIAM E. WARNE
Director
Department of Water Resources

LIBRARY
UNIVERSITY OF CALIFORNIA
DAVIS

FOREWORD

In November 1960, the California Water Development Bond Act was approved by the State's electorate, paving the way for the construction of the State Water Project as the first phase of the California Water Plan. Since that time, many local water service agencies throughout the State have applied to the Department of Water Resources for consideration as potential contractors with the State for water service from the proposed facilities. Several water agencies have been organized since November 1960 expressly for the purpose of obtaining supplemental water supplies from the State facilities for the areas they represent.

Prior to executing contracts for water service with water agencies, the Department of Water Resources makes studies of those agencies and the areas encompassed by them to determine the propriety of entering into such contracts. These studies are made with the goal of evaluating (1) each area's future demand for supplemental water supplies, (2) the legal ability of each agency in question to enter into a water supply contract with the State, (3) the engineering feasibility of providing the proposed water service, (4) the economic justification of providing such service, and (5) the capability of each agency and its constituent area to bear the financial burden necessarily imposed upon it by a water supply contract.

The results of the studies made for each agency, as described above, along with significant incidental and supporting material, are embodied in reports published by the Department of Water Resources. This bulletin is one of a series of such publications, and deals with the San Gabriel Valley Municipal Water District.

TABLE OF CONTENTS

	<u>Page</u>
FOREWORD	iii
ORGANIZATION	ix
CHAPTER I. INTRODUCTION	1
Description of the Service Area	2
History of the Area	3
Primary Economic Development	5
Classification of Lands	5
Restrictions on Future Development	6
Description of San Gabriel Valley Municipal Water District	6
Taxing Powers and Ability to Contract with the State . .	7
Annexations and Exclusions of Land	8
CHAPTER II. PRESENT AND FUTURE DEVELOPMENT OF ECONOMY . . .	11
Population	11
Historical Population Growth	12
Population Projections	13
Agriculture	14
Manufacturing	15
Wholesale and Retail Trade	17
Present and Future Land Use	18
CHAPTER III. DEMAND FOR PROJECT WATER . . .	23
Present and Future Unit Water Use	24
Present and Future Water Utilization	24

	<u>Page</u>
Local Water Supplies and Ground Water Overdraft	25
Demand for Project Water	26
Supplemental Water Requirements and Demand for Project Water	27
Buildup of Demand for Project Water	27
 CHAPTER IV. COST OF WATER SERVICE FROM THE STATE WATER PROJECT	31
State Water Project	32
Construction Features of State Water Project	32
Cost of State Water Project	33
Local Distribution Facilities	35
Construction Features of Local Distribution Facilities . .	36
Cost of Local Distribution Facilities	36
Unit Costs of Water Service	37
 CHAPTER V. ECONOMIC JUSTIFICATION AND FINANCIAL FEASIBILITY.	39
Economic Justification	39
Financial Feasibility	41
Present and Projected Assessed Valuation	41
Present and Projected Bonded Indebtedness	44
Financing Future Obligations	47
Comparison of Assessed Valuations to Bonded Debt . .	48
Levels of Ad Valorem Taxation	49
 CHAPTER VI. CONCLUSIONS	53

TABLES

<u>Number</u>		<u>Page</u>
1	Historical and Projected Populations of the Cities of the San Gabriel Valley Municipal Water District, 1940-1990	14
2	Present Land Use in the San Gabriel Valley Municipal Water District	19
3	Present and Projected Urban Population Densities for Developed Areas in the San Gabriel Valley Municipal Water District, 1960-1990	20
4	Present and Projected Urban Land Requirements in the San Gabriel Valley Municipal Water District, 1960-1990	20
5	Estimated Annual Unit Values of Consumptive Use of Applied Water for Urban Purposes in the Cities of the San Gabriel Valley Municipal Water District, 1960-1990	24
6	Present and Projected Urban Water Requirements in the Cities of the San Gabriel Valley Municipal Water District, 1960-1990	25
7	Total and Supplemental Water Requirements of the San Gabriel Valley Municipal Water District, 1960-1990	27
8	Estimated Annual Water Deliveries to the San Gabriel Valley Municipal Water District from the State Water Project	29
9	Annual Component Costs of Water Service from the State Water Project to the San Gabriel Valley Municipal Water District	35
10	Estimated Unit Costs of Water Service to the San Gabriel Valley Municipal Water District from the State Water Project	38
11	Historical Assessed Valuations in the San Gabriel Valley Municipal Water District	42
12	Present Per Capita Assessed Valuations in the San Gabriel Valley Municipal Water District	43
13	Present and Projected Assessed Valuations in the San Gabriel Valley Municipal Water District	44

TABLES

<u>Number</u>		<u>Page</u>
14	Present Bonded Indebtedness in the San Gabriel Valley Municipal Water District, by Type of District . . .	45
15	Historical Bonded Indebtedness in the San Gabriel Valley Municipal Water District	46-
16	Present and Projected Bonded Indebtedness in the San Gabriel Valley Municipal Water District	47
17	Summary of Capital Repayment Obligations Resulting From Water Service to the San Gabriel Valley Municipal Water District	48
18	Weighted Average Tax Rate Components in the San Gabriel Valley Municipal Water District	49
19	Tax Rates Necessary for Capital Repayment of Local Distribution Facilities and State Water Project by the San Gabriel Valley Municipal Water District . .	51

PLATES

1	Location Map and Boundaries of District
2	Local Distribution Facilities

APPENDIX A

Credit Analysis of the San Gabriel Valley Municipal Water District

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

EDMUND G. BROWN, Governor
HUGO FISHER, Administrator, The Resources Agency of California
WILLIAM E. WARNE, Director, Department of Water Resources
ALFRED R. GOLZE', Chief Engineer
JOHN R. TEERINK, Assistant Chief Engineer

- - - - -

SOUTHERN DISTRICT

James J. Doody District Engineer
Herbert W. Greydanus Chief, Planning Branch

- - - - -

This report was prepared under the direction
of

Vernon E. Valantine Chief, Project Development Section

by

Clyde B. Arnold Associate Engineer, Water Resources
Jay M. Federman Associate Economist, Water Resources

assisted by

Jasper Freese Associate Engineer, Water Resources
John M. Johnson Water Resources Technician II

CHAPTER I. INTRODUCTION

In April 1962, the Board of Directors of the San Gabriel Valley Municipal Water District adopted a resolution that requested the Department of Water Resources to consider the district as a potential prime contractor for water from the State Water Project and expressed the board's desire to sign a water supply contract as soon as possible. Pursuant to this request, the department conducted an investigation to determine the engineering feasibility and economic justification of providing supplemental water to the district and to evaluate the financial capability of the district to support a water supply contract. An analysis of the facts gathered during this investigation led to the conclusion that the district did have the ability, necessity, economic justification, and financial capability required to enter into a water supply contract with the State.

Acting on the above findings, the State and the district executed a contract on November 3, 1962, for a maximum annual entitlement of 25,000 acre-feet. Since the contract was signed before a report of the above investigation could be published, this report is being published at the present time so that other interested water agencies and members of the public may be informed of the considerations that led to the contract. The report includes a review of the economic history of the area in which the district is located, its recent economic development and future economic potential, estimates of the area's future water needs, and a schedule of the probable costs of serving the district with water from the State Water Project. The report also evaluates the economic and financial aspects of supplying water to the district's area from the State Water Project.

Description of the Service Area

The San Gabriel Valley Municipal Water District consists of four cities located in the San Gabriel Valley portion of the Los Angeles County Coastal Plain. This valley is bounded on the north by the San Gabriel Mountains, on the south by the Montebello and San Jose Hills, on the east by San Bernardino County and on the west by the San Rafael Hills. The water district is virtually coextensive with the boundaries of the cities of Alhambra, Monterey Park, Sierra Madre, and Azusa. Alhambra and Monterey Park are located about eight miles northeast of downtown Los Angeles in the western part of the valley and are the only cities in the district sharing a common boundary. The cities of Sierra Madre and Azusa are located about 12 and 20 miles northeast of downtown Los Angeles, respectively, on the northern rim of the valley.

There are about 15,550 acres of land in the district, ranging in elevation from 250 to 2,300 feet. Although a small part of the lands within the district lie outside the boundaries of its four cities, and although some of the lands within these cities are not within the district, the boundaries of these cities and the district are so nearly identical that they were considered to be coterminous for the purpose of compiling data for this report. The general area in which the district is located is shown on Plate 1, "Location Map and Boundaries of the District."

The San Gabriel Valley has a mediterranean-type, subtropical climate, characterized by hot, dry summers followed by short, mild, rainy winters. Generally, the valley has slightly more rain and greater high and low average temperatures than the more coastal cities of the Los Angeles region. In Sierra Madre, which is fairly representative of the district,

average summer temperatures range from 59 to 86 degrees Fahrenheit and winter temperatures from 45 to 62 degrees. Average annual precipitation is about 18 inches and the area experiences frost on only a few nights during the year.

History of the Area

The first Europeans to visit the San Gabriel Valley were members of the Portola expedition, who passed through the area in 1769 on their way north to explore and colonize California for Spain.

Two years later, a mission was established on the banks of the San Gabriel River, where running water and fertile land were found. Cattle raising was the major occupation in the valley during the mission period, but corn, beans, wheat, and barley were grown in significant quantities. The friars also experimented with orchard and vineyard crops, and demonstrated that subtropical fruits could be successfully grown in the area.

Mexico's revolt against Spain brought California under Mexican control in 1822. Shortly thereafter, the vast land holdings of the missions in the San Gabriel Valley and other parts of the State were placed at the disposal of the Mexican Government and eventually broken up into a series of privately owned ranchos. The ranchos that were established in the San Gabriel Valley continued to be grazed by large herds of cattle, whose products furnished their owners with sustenance and important commodities for trade.

The discovery of gold near Coloma in 1848, after California had become a part of the United States, had a significant effect on the economy of the southwest. The gold rush created a great demand for beef by miners

and immigrants. Southern California ranchers met the demand by driving their cattle to the new markets. The boom period ended during the late 1850's when mining activity slackened and prices for Southern California beef dropped sharply. The fall in beef prices speeded the breakup of the ranchos, but conflicts over land titles and long drought periods also helped bring the rancho era to an end. Most of the rancho lands in the San Gabriel Valley were subdivided and offered for sale as farm acreage to recently arrived Americans.

The valley, however, received relatively few settlers until railroad links were established with the East. In 1876, the Southern Pacific Railway furnished the first transcontinental rail connection to Southern California by the line from Los Angeles to San Francisco. In 1885, the Santa Fe Railway provided an additional route to the East. The passenger rate war that eventually ensued between these two systems induced the first large population migration to Southern California and culminated in the land boom of 1888. It was during this period that many new communities were laid out in the San Gabriel Valley, including Alhambra, Azusa, and Sierra Madre, among others.

Cattle grazing was gradually abandoned during this period and farm lands were turned to the raising of citrus, olives, and grapes. During the next few decades, the economy of the San Gabriel Valley continued to rest largely on an agricultural base. In the 1920's, however, the first small industrial establishments began to move into the Alhambra area, attracted by surplus labor supplies and proximity to the rapidly expanding market of Los Angeles. The process of industrial development was accelerated by the upsurge of federal defense spending during World War II. After the war, the basic importance of agriculture in the outlying sections of the valley began

to wane under the impact of advancing urbanization and the area has now been transformed into a metropolitan complex of homes, commerce, and industry.

Primary Economic Development

Trade, services, and manufacturing are currently the most important industries in the cities of the San Gabriel Valley Municipal Water District. While the retail trade and service establishments are engaged mainly in servicing the needs of local residents, the retail demands of visitors and residents of neighboring communities account for an important share of their business.

Within recent years, manufacturing has expanded steadily until it is now the largest source of job opportunities in the four cities of the district. The manufacturing plants in the district include many foundries, a large brewery, producers of rocket engines, oil field equipment, machine parts, and a variety of other items.

Classification of Lands

There are 15,550 acres of land within the four cities of the San Gabriel Valley Municipal Water District, 13,560 of which have been classified by the Department of Water Resources as being susceptible of urban or agricultural development. This land classification has been made only into the two broad categories of usable and nonusable lands, rather than in a more detailed manner, and no differentiation has been made of these lands as to topography or soil texture.

Restrictions on Future Development

The four cities of the San Gabriel Valley Municipal Water District offer many advantages conducive to urban development. They are located near the heart of the fastest growing metropolitan area in the country, are served by a modern freeway and transportation system, and still have a considerable acreage of level land suitable for home building and industrial development. There are, however, certain factors that could retard economic growth in the immediate future. Among these is the fact that the growth rate could be less rapid than anticipated, if other areas develop advantages that are more favorable to urban activity than can be offered by the cities in the district. Excessive land speculation in the district, for example, could place its area at a disadvantage in its competition with other areas where the price of land is more reasonable. The most critical factor affecting the future development of the district, however, is the adequacy of future water supplies. The area's future growth will be severely hampered without supplemental water supplies due to litigation, both pending and completed, that has already restricted pumping in one city and may result in reduced pumping rights within the other cities in the district. The importation of water from the State Water Project will relieve these actual and potentially adverse conditions and safeguard the district's potential for future urban and economic development.

Description of the San Gabriel Valley Municipal Water District

The San Gabriel Valley Municipal Water District was incorporated in 1959, primarily for the purpose of obtaining a supplemental water supply for the member cities of the district. It was established under the provisions of Chapter 671, Statutes of 1911, commonly known as the Municipal Water

District Act. This legislation and its amendments prescribe the district's organization, management, financing, and other powers and duties.

Taxing Powers and Ability to Contract with the State

Section 23 of the Municipal Water District Act authorizes the Board of Directors of the district to levy a charge for water service that will yield revenues sufficient to pay the operating expenses of the agency, provide a reasonable surplus for improvements, and pay the interest and principal on any contractual or bonded debt. If the revenues from water sales by the district are inadequate to meet these financial needs, the board is authorized to fix tax rates at a level sufficient to raise the additional funds necessary. There is no limit on the tax rate that the board may impose for such purposes.

Section 12 of the Municipal Water District Act authorizes the district to enter into contracts with other public agencies and private corporations for the purpose of acquiring waters, lands, water rights, and facilities for the benefit of the district. The term "public agency" is defined in this section to include the United States of America, the State of California, and any county, city, or public district in the State. Any contract with the United States Government or a private corporation, however, under which the district would incur an indebtedness in that year exceeding its revenues for that year, may not be executed without the consent of two-thirds of the qualified voters of the district, but there are no similar limitations on the ability of the district to contract with the State of California.

The San Gabriel Valley Municipal Water District, under Sections 12 and 15 of the enabling act, has broad powers to borrow money. Subdivisions 8(a) and 8(b) of Section 15 authorize the issuance of promissory notes.

Notes issued for financing the construction of administrative or commercial office buildings and for the acquisition of land for district purposes are limited to a six percent annual interest rate and a maturity of ten years. The total amount of such notes outstanding at any one time may be at least \$50,000 but may not otherwise exceed the lesser of either \$500,000 or one percent of the assessed valuation of taxable property in the district. Notes for other purposes must mature within three years from the date of issue and may bear interest at a rate no greater than six percent per year. The total amount of outstanding notes at any one time may be at least \$75,000 but may not otherwise exceed the lesser of \$1,000,000 or two percent of the assessed valuation of taxable property in the district. Section 15 also authorizes the district to issue bonds, but the proposed issue must be approved in a bond election by two-thirds of the voters in the district. Bonds are limited to an annual interest rate of five percent and a maturity of 40 years.

Annexations and Exclusions of Land

Section 27 of the Municipal Water District Act gives the San Gabriel Valley Municipal Water District the power to annex additional territory. The land proposed for annexation may be located in any portion of the county in which the district is situated and need not be contiguous with the district.

Proceedings for the annexation of inhabited land must be initiated by a petition signed by at least ten percent of the voters who reside in the area proposed to be annexed and who voted for the office of Governor in the most recent general election. If, however, one or more cities are included in the territory proposed to be annexed, the petition must be signed by at least ten percent of the voters in each city so voting in the last general

election. The land under consideration may then be annexed by the district upon the approval of the petition by the district's Board of Directors and subsequent approval by a majority of those voting in the area to be annexed in an annexation election.

Uninhabited territory within the county in which the district is located may also be annexed to the district. (Territory shall be deemed uninhabited if less than 12 voters reside therein at the time annexation proceedings are initiated). Proceedings for the annexation of uninhabited territory may be initiated by a resolution of the Board of Directors or by the owners of at least one-fourth of the property affected, as measured by both area and assessed valuation. If the petition or resolution is accepted by the board, it may adopt an ordinance approving the annexation of the territory. Such territory may not be annexed, however, if protests are filed with the Board of Directors by the owners of one-half of the assessed valuation of the territory proposed to be annexed.

Territory in the district may also be excluded from it. If any part of an incorporated city is included in the territory proposed for exclusion, however, then all of the area of that city must be within the territory proposed to be excluded. Proceedings for the exclusion of inhabited territory may be initiated by a resolution of the district's Board of Directors or by a petition signed by ten percent of the voters who reside in the area proposed for exclusion and who voted for the office of Governor in the most recent general election held prior to the filing of the petition. If one or more cities are located in the area to be excluded, then the petition must be signed by at least ten percent of the voters in each city. If the petition or resolution is subsequently approved by a majority of the votes cast in an election held in the area affected, that area will be excluded from the district.

Proceedings for the exclusion of uninhabited territory may be initiated by a resolution of the Board of Directors or by a petition signed by owners of at least one-fourth of the property affected, as measured by both area and assessed valuation. The Board of Directors may then, after a public hearing, approve or disapprove the exclusion. The exclusion may not be approved by the board, however, if protests are filed by owners of one-half the value of the affected property. Any property excluded from the district will remain taxable by the district for the repayment of contractual or bonded indebtedness existing at the time of the exclusion until such indebtedness is fully repaid.

CHAPTER II. PRESENT AND FUTURE DEVELOPMENT OF ECONOMY

For more than a century, agriculture was the dominant element in the economic life of the San Gabriel Valley. Livestock production was the first economic activity in the area, but after the breakup of the predominantly cattle-raising ranchos during the 1860's the raising of citrus and grapes became the valley's major economic interest and continued to occupy this position until after World War II. Although a significant amount of farm acreage in the western part of the valley was displaced by urban development during the early part of the current century, it was only after the second World War that the outlying sections of the valley began to feel the impact of advancing urbanization. In response to continued population pressures, many new residential sections were established in these areas, forcing an increasing amount of farmland out of production.

The trends studied and reported on in this chapter indicate that the San Gabriel Valley Municipal Water District will continue to experience a substantial rate of population and economic growth during the next three decades, providing that additional water supplies become available, land prices remain at reasonable levels, and the national and state economies continue their historic expansion. The small amount of farmland in the four cities of the district is expected to disappear as population expands, changing these cities into more highly urbanized parts of the Los Angeles Metropolitan complex.

Population

In keeping with the mass in-migration into Southern California, the cities of the San Gabriel Valley Municipal Water District have grown

steadily in population throughout the past 80 years. The growth in population during the pre-World War II period was moderate, however, and was concentrated largely in the City of Alhambra, on the perimeter of the City of Los Angeles. It was only after the war that population gains in the other cities of the district attained significant proportions.

Historical Population Growth

The federal census of 1940 placed the population of the four cities of the San Gabriel Valley Municipal Water District at 57,000. The total climbed by 58 percent during the next decade to 90,000 in 1950, and continued upward to 123,000 in 1960, a gain of 37 percent over the 1950 level. One of the major factors behind the population rise since World War II was the desire of many newcomers to settle in suburban areas, rather than in the more crowded and developed parts of the Los Angeles area. A large number of new residents were also attracted by the job opportunities offered by the large number of industrial and commercial establishments that moved into the area during the post-war years.

The population gains of recent years have affected the cities of the San Gabriel Valley Municipal Water District in widely varying degrees. Between 1940 and 1960, percentage increases in population have ranged from 41 percent in Alhambra to 343 percent in Monterey Park. The two other cities in the district, Azusa and Sierra Madre, registered gains of 293 percent and 112 percent, respectively, during that period of time.

These changes have produced a significant shift in the distribution of population within the district. In 1940, Alhambra, then the most highly developed city, claimed about two-thirds of the district's population, but by 1960 its share had fallen to 45 percent. During the same

period, the percentage of those residing in Azusa, Monterey Park, and Sierra Madre increased from 33 percent to 55 percent of the total.

Population Projections

Projections of the future population of the San Gabriel Valley Municipal Water District cannot be made by separate and independent analyses of factors of natural increase and in-migration applicable only to that particular area. Valid population forecasts must consider the interrelationships between adjacent areas, their respective resources, status of development, external and internal economic and demographic pressures, and other factors. Studies of this nature have been performed by the Department of Water Resources for many areas of Southern California and are reported in the department's Bulletin No. 78, Appendix D, "Economic Demand for Imported Water."

There were no specific projections made for the San Gabriel Valley Municipal Water District for Appendix D, but projections were made for a large number of geographical subunits in the Los Angeles Metropolitan area, including the San Gabriel Valley, as a whole. These projections were based on the theory that population growth in any metropolitan area progresses in a wave-like manner from the center towards the periphery of the area. This effect results in the formation of suburbs, which eventually become densely populated and support further growth in more distant areas. The projections made in Bulletin 78, and its Appendix D, were used as guides in forecasting future growth in the four cities of the San Gabriel Valley Municipal Water District, and were updated to take into consideration the results of the 1960 census of population, which were not available during the Bulletin No. 78 studies.

The population gains forecast for the cities of the district are expected to stem mainly from a continuing influx of new residents who are expected to be attracted to the area by the continued expansion of job opportunities there and in neighboring parts of the Los Angeles Metropolitan area. The rate of population growth, however, is expected to taper off appreciably with the passage of time as vacant lands in the area are developed. Whereas a population gain of 41,000 is anticipated from 1960 to 1970, it is expected that only about 14,000 residents will be added to the district's cities between 1970 and 1980, and only about 7,000 during the next decade to 1990. Table 1 shows both the historical and projected future populations of the four cities within the San Gabriel Valley Municipal Water District.

TABLE 1
HISTORICAL AND PROJECTED POPULATIONS OF
THE CITIES OF THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
1940-1990

City	Population					
	1940	1950	1960	1970	1980	1990
Alhambra	38,900	51,400	54,800	67,500	72,300	74,700
Azusa	5,200	11,000	20,500	28,000	31,800	35,600
Monterey Park	8,500	20,400	37,800	56,000	59,500	60,300
Sierra Madre	4,600	7,300	9,700	12,300	14,500	14,700
Total, San Gabriel Valley Municipal Water District	<u>57,200</u>	<u>90,100</u>	<u>122,800</u>	<u>163,800</u>	<u>178,100</u>	<u>185,300</u>

Agriculture

As has been previously mentioned, agriculture was the major segment of the San Gabriel Valley's economy until after World War II. The area was especially noted for its orange groves, and lemons, walnuts, and avocados were also grown in significant quantities. The rapid urbanization of the valley

since 1945, however, has caused a substantial reduction in the acreage available for farm use. This trend is clearly reflected in the San Gabriel Valley Municipal Water District, where statistics obtained from land use surveys conducted by the Department of Water Resources indicate that in 1932, about 4,500 acres, or 29 percent of the district's total land area, was devoted to agricultural use, whereas by 1960 this acreage had fallen to only 160 acres. Further reductions are anticipated as urban pressures continue and it is expected that in 1970 there will be no farming within the district.

Manufacturing

Industrial development in the four cities of the San Gabriel Valley Municipal Water District proceeded at a relatively moderate rate during the first few decades of the 20th century but accelerated under the impact of defense spending during World War II. Throughout this period, the City of Alhambra was the center of industrial activity. There were a few industrial plants opened in other parts of the district too, which were engaged largely in food processing and other activities closely related to agriculture.

The period of greatest industrial growth occurred after the war when a large number of new firms were established on land formerly occupied by citrus groves in Azusa and Monterey Park. Some indication of the magnitude of this growth may be obtained from data provided by the United States Census of Manufacturing for the years 1939 and 1958. These data are not strictly comparable, since 1939 figures are available only for Alhambra, while 1958 figures are available for Alhambra, Azusa, and Monterey Park. A comparison is nevertheless helpful, to indicate the growth of industry

in the district since World War II. In 1939, there were 63 manufacturing plants in the City of Alhambra, employing 1,760 workers and having a value added by manufacture of \$4,988,000. By 1958, there were 263 industrial firms in the cities of Alhambra, Azusa, and Monterey Park, employing 12,800 workers and having a value added by manufacture of \$123,761,000.

The largest industrial firm in the water district's area is the Aerojet-General Corporation, a subsidiary of the General Tire and Rubber Corporation. The company is engaged in the design, development, and manufacture of rocket engines, electronic components, and guidance systems for missiles and spacecraft. Nearly 6,000 workers were employed by the firm in October 1962, a figure equal to 45 percent of the district's total factory employment in 1958.

Standing well below Aerojet-General in terms of employment, but ranking among the major industrial firms in the district, are the Lucky Lager Brewing Company of Azusa with 500 workers, Gilfillan Bros., an electronics company employing 250 workers, and the Rowland Electric Company, in Alhambra, with a staff of 200 workers. The district is also the home of a number of other smaller companies including many foundries and machine shops as well as manufacturers of wheel goods, pharmaceuticals, machinery, and a variety of other products.

There are a number of factors that have contributed to the recent industrial growth of the district and that are likely to be the cause of continued expansion in the future. Foremost among these is that the district is an integral part of the nation's third largest and fastest growing market, and is tied to this market and to other markets across the nation by major rail lines and highways. Furthermore, the four cities of the San Gabriel Valley Municipal Water District possess an adequate supply of

skilled and unskilled labor as well as good housing, schools, and recreational facilities that will attract additional residents to the area in the future. Finally, although all lands in the cities of the district are expected to be fully occupied by 1990, there are large parcels of land suitable for industrial expansion available for development at the present time. For example, there are two new industrial parks in Azusa and Monterey Park that have a number of attractive sites fully equipped with railroad sidings, utilities, and other structures.

While the importance of future industrial growth in the district's area cannot be minimized, it should be noted that the economic well being of the area is and will continue to be, inextricably bound up with economic developments in other parts of the Los Angeles Metropolitan area. In Southern California, as in many other parts of the nation, a great many people work in one city, reside in another, and make important purchases in a third. For this reason, the level of economic activity within the cities of the district itself can furnish only a partial index of local prosperity.

Wholesale and Retail Trade

The growth of population in the four cities of the San Gabriel Valley Municipal Water District has necessitated the establishment of all types of retail and wholesale outlets to meet the demands of an expanding consumer market. National and regional food, drug, and variety chains now have or are building branches in the area, while a number of suburban department stores, owned by companies whose main stores are located in the downtown Los Angeles area, have been erected in neighboring communities. According to the United States Census of Business, the number of wholesale

and retail establishments in the district's area rose from 869 to 1,201 between 1939 and 1958, and the number of persons employed in these establishments climbed from 2,486 to 6,621 during the same period. Taxable retail sales in the four cities amounted to \$168,000,000 in 1961.

The dependence of all segments of the population on the automobile, the time-saving advantages of centralized buying, and the limitations imposed on the location of new stores in growth areas have fostered the development of modern shopping centers with large parking areas. At present, shopping centers exist in all sections of the district and others are planned to keep abreast of new subdivision developments. Many other establishments are located in the older business sections of the cities of the district, lining the major thoroughfares and intersecting streets.

Present and Future Land Use

Estimates of present and future land use in the cities of the San Gabriel Valley Municipal Water District were made by the department in order to determine the extent to which the area would physically develop during the next 30 years. This information was necessary in order to ensure that future population growth and urban development, as projected in this report, would be within the limits of available land resources.

An analysis of present land use in the area encompassed by the San Gabriel Valley Municipal Water District indicates that 10,700 acres, or slightly more than two-thirds of the estimated 15,550 acres of usable land in the district, are currently being put to beneficial use. Table 2 indicates the approximate acreages currently devoted to various land uses in the district.

TABLE 2

PRESENT LAND USE IN
THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Type of land use	: Acres in use ^{1/}
Developed urban land	10,540
Irrigated farmland	150
Nonirrigated farmland	<u>10</u>
Subtotal, developed land	10,700
Undeveloped irrigable or habitable land	<u>2,860</u>
Subtotal, usable land	13,560
Lands unsuitable for development	<u>1,990</u>
Total land area	<u>15,550</u>

^{1/} As of 1960.

Future land requirements for urban use were computed from the department's projections of population and from estimated future population densities. The experience in most urban areas of Southern California has been that urban population densities increase as population increases, and it was assumed that this pattern would also occur in the district's area. Accordingly, projections of increased population densities were made for the four cities of the district using 1960 data as a base. These estimates of population density are based on land areas actually in use for urban purposes, rather than on the total area of habitable land within the district. Table 3 indicates the department's estimates of current and projections of future urban population densities for the four cities encompassed by the San Gabriel Valley Municipal Water District.

TABLE 3

PRESENT AND PROJECTED URBAN POPULATION DENSITIES
FOR DEVELOPED AREAS IN THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
1960-1990

City	Urban population densities, persons per acre ^{1/}			
	1960	1970	1980	1990
Alhambra	12.1	14.0	15.0	15.5
Azusa	9.6	10.4	10.4	11.0
Monterey Park	13.6	14.0	14.3	14.5
Sierra Madre	9.0	10.2	10.8	11.0

^{1/} Based on land devoted to urban use.

From the population density projections shown in Table 3 and from the department's projections of population presented in Table 1, the total urban land requirements for the cities of the San Gabriel Valley Municipal Water District were computed. These requirements are shown in Table 4.

TABLE 4

PRESENT AND PROJECTED URBAN LAND REQUIREMENTS IN THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
1960-1990

City	Urban land requirements, in acres			
	1960	1970	1980	1990
Alhambra	4,530	4,800	4,800	4,800
Azusa	2,140	2,700	3,100	3,300
Monterey Park	2,790	4,000	4,200	4,200
Sierra Madre	<u>1,080</u>	<u>1,200</u>	<u>1,300</u>	<u>1,300</u>
Total	<u>10,540</u>	<u>12,700</u>	<u>13,400</u>	<u>13,600</u>

Since all land use in the San Gabriel Valley Municipal Water District is expected to be urban in character by 1970, the urban land use estimates shown in Table 4 above may be regarded as being total land use. From data presented in Tables 3 and 4, the ratio of land use to total usable lands in the district was computed to be 69 percent in 1960 and 100 percent in 1990, so that by 1990 all usable lands in the district are expected to be utilized for urban purposes. There is at present a substantially high degree of urban development existing in the four cities of the district, with nearly 70 percent of the district's land already devoted to urban purposes, and only about 3,000 acres of land remain available for urban development. Because of the restricted availability of land, population growth in the district's area over the next 30 years will not be as great as that experienced in less developed, outlying areas. However, due to increasing population densities in the area, the cities of the district will have a larger population increase to 1990 than the available land resources would otherwise indicate.

CHAPTER III. DEMAND FOR PROJECT WATER

The urbanization of the San Gabriel Valley during the past 15 years has had a significant effect on the pattern of water use in the area and in the San Gabriel Valley Municipal Water District. Urban water use has expanded quite rapidly during this period of time while agricultural water use has declined to a very low level. It is anticipated that by 1970 the demand for water for agricultural use will have disappeared completely, but urban water use is expected to increase to such an extent that it will much more than offset the projected decrease in agricultural water use during the next several years, and will necessitate a supplemental source of water for the area within the next decade.

Future supplemental water requirements in the four cities of the San Gabriel Valley Municipal Water District were computed for this report as the difference between the total water requirements for the district's area, derived from applying the appropriate unit values of urban water use to projections of the district's population contained in Chapter II, and the estimated withdrawals from local ground water sources by the cities of the district. Since water use in the district is expected to be wholly urban by 1970, it was not necessary to make projections of agricultural water requirements for this report. These supplemental water requirements may be met by temporarily overdrawing ground water basins, by importing supplemental water supplies, or both. The physical situation of the ground water basins underlying the district's area, the rates of ground water extraction, and the outlook for an agreement on ground water basin management were then taken into account to arrive at estimates of the imported water deliveries required to eliminate overdraft in the district.

Present and Future Unit Water Use

Estimates of unit values of urban water use for the cities of the San Gabriel Valley Municipal Water District were based on studies made by the department for its Bulletin No. 78, "Investigation of Alternative Aqueduct Systems to Serve Southern California." The values presented in Bulletin No. 78 represent average values for the San Gabriel Valley in general, and were therefore modified for this report to be more nearly representative of the actual values for the four cities in the district. The estimated present and projected values of unit urban water use for the four cities in the San Gabriel Valley Municipal Water District are shown in Table 5.

TABLE 5

ESTIMATED ANNUAL UNIT VALUES OF CONSUMPTIVE USE OF
APPLIED WATER FOR URBAN PURPOSES IN THE CITIES OF
THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
1960-1990

City	Acre-feet per capita per year			
	1960	1970	1980	1990
Alhambra	0.175	0.190	0.208	0.224
Azusa	.290	.298	.306	.314
Monterey Park	.165	.185	.205	.224
Sierra Madre	.207	.220	.233	.246

Present and Future Water Utilization

The present and projected future use of water for municipal and industrial purposes in the San Gabriel Valley Municipal Water District was determined by applying the appropriate estimates of per capita water use to projections of population for each decade of the study made for this

report. Projections of municipal and industrial water requirements for the district's area for the next thirty years are shown in Table 6.

TABLE 6

PRESENT AND PROJECTED URBAN WATER REQUIREMENTS
IN THE CITIES OF THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
1960-1990

City	Water requirements, acre-feet per year					
	1960	1970	1972	1980	1990	
Alhambra	9,590	12,800	13,300	15,100	16,700	
Azusa	5,950	8,350	8,630	9,700	11,200	
Monterey Park	6,240	10,350	10,720	12,200	13,500	
Sierra Madre	<u>2,020</u>	<u>2,700</u>	<u>2,850</u>	<u>3,400</u>	<u>3,600</u>	
Total	<u>23,800</u>	<u>34,200</u>	<u>35,500</u>	<u>40,400</u>	<u>45,000</u>	

Local Water Supplies and Ground Water Overdraft

The four cities that comprise the San Gabriel Valley Municipal Water District rely exclusively on ground water extractions to supply local water demands. The cities of Alhambra, Azusa, and Monterey Park pump from the San Gabriel Valley Basin, while Sierra Madre extracts its water from the Raymond Basin.

The amount of water that may be extracted by the City of Sierra Madre is limited by the terms of an adjudicated agreement on the Raymond Basin and under this agreement, water withdrawals are, at least in part, governed by seasonal conditions of natural replenishment. It is expected that the city's average future withdrawals from the basin will be approximately the same as they are at the present time.

Although there are as yet no legal restrictions on the amount of water that the cities of Alhambra, Azusa, and Monterey Park may pump from

the San Gabriel Valley Basin, negotiations now being conducted by San Gabriel Valley water users and water users below the Whittier Narrows may result in a compromise agreement that will guarantee a certain minimum flow of water through the narrows for downstream use. It was therefore assumed for purposes of this report that the district's future, long-term annual extractions from this basin would decline slightly, in view of the likelihood of such an agreement.

Preliminary calculations by the department and by consulting engineers indicate that current levels of replenishment and extractions in the ground water basins underlying the district are nearly in balance. There is probably a slight overdraft on the San Gabriel Valley Basin, but the extent of this overdraft can be determined only by a thorough investigation of the hydrologic conditions of the basin.

Present ground water extractions by the member cities of the San Gabriel Valley Municipal Water District presently amount to about 23,800 acre-feet annually. Based on a conservative analysis of future local water supply availability, however, it is estimated that the long term local water supply of the district will be about 20,000 acre-feet annually.

Demand for Project Water

The local water supplies utilized by the four cities of the San Gabriel Valley Municipal Water District appear to be fully developed at the present time. The local water supplies of the area could be expanded, however, by increasing the capacity of spreading basins operated by the cities of Sierra Madre and Azusa and by the reclamation of sewage effluents, but these projects would not produce a sufficient quantity of water to

satisfy all future water demands. It appears, therefore, that the future water needs of the district must be met by the importation of water. This report considers the feasibility of importing this water through the State Water Project.

Supplemental Water Requirements and Demand for Project Water

Having developed estimates of total water requirements for the San Gabriel Valley Municipal Water District through the year 1990 and having made estimates of present and future local water supplies, it was possible to determine the supplemental water requirements for the four cities of the district. These requirements, determined in accordance with the procedures mentioned at the beginning of this chapter, are shown in Table 7.

TABLE 7

TOTAL AND SUPPLEMENTAL WATER REQUIREMENTS
OF THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
1960-1990
(IN ACRE-FEET)

Year	Total water requirements	Local water supplies	Supplemental water requirements
1960	23,800	--	--
1970	34,200	20,000	14,200
1972	35,500	20,000	15,500
1980	40,400	20,000	20,400
1990	45,000	20,000	25,000

Buildup of Demand for Project Water

The four cities of the San Gabriel Valley Municipal Water District can presently meet their existing water demands from local water supplies by extractions from the ground water basins underlying their areas. To meet current needs, however, it is probable that some overdrafting of these ground

water basins is necessary, although the precise extent to which this occurs is not presently determinable. An exception to this statement may be the City of Sierra Madre, which is limited in the amount of water it can take from the Raymond Basin. This city may be able to obtain the additional water it needs, both at this time and during the next few years, by extractions from the San Gabriel Valley Basin.

Department estimates indicate that by 1972 the cities of the district will have a demand for 15,500 acre-feet of water in excess of the estimated local water supplies and that by 1980 these supplemental water requirements will amount to about 20,400 acre-feet; therefore, it was concluded by the department that these quantities of water would be delivered to the district in accordance with the schedule shown in Table 7.

Consulting engineers for the San Gabriel Valley Municipal Water District have recommended an annual delivery schedule that is considerably lower in the early years than that shown in Table 7. Accordingly, the supplemental water requirements for the cities of the district, as recommended by the consulting engineers, were incorporated into the district's water supply contract and have been postulated for this report to be the district's schedule of annual entitlements for project water from the State Water Project from 1972 through 1990. This schedule is shown in Table 8. Subsequent analysis of the cost of water service to the district from the State Water Project has been based on the annual water entitlements shown in this table.

TABLE 8

ESTIMATED ANNUAL WATER DELIVERIES
TO THE SAN GABRIEL VALLEY MUNICIPAL
WATER DISTRICT FROM THE STATE WATER PROJECT

Year	:	Annual water deliveries, in acre-feet
1972		10,600
1975		13,100
1980		17,400
1985		21,500
1990		25,000

CHAPTER IV. COST OF WATER SERVICE FROM THE STATE WATER PROJECT

The cost of water service from the State Water Project to the San Gabriel Valley Municipal Water District is dependent upon the district's allocated portion of construction, operation and maintenance costs of the California Aqueduct, the cost accruing from the Delta Water Charge, and the cost of local conveyance systems. Local conveyance systems will be constructed and paid for by the district itself. Construction of the State Water Facilities, on the other hand, will be done by the State and will be financed with moneys from the California Water Fund and from the sale by the State of general obligation bonds authorized under the Water Resources Development Bond Act of 1959.

Under the standard contract for water service, each contracting agency undertakes an obligation to repay the State for its share of costs associated with water deliveries from the State Water Project. These costs include a share of the costs incurred for the construction of transportation facilities, a proportionate share of the operation and maintenance cost of those facilities, and the Delta Water Charge. The allocation of the costs to each agency is made on the proportionate use of facilities concept method of cost allocation.

If a peaking delivery capability is desired by an agency, the costs associated with this service are also allocated to each contractor.

State Water Project

The cost of the State Water Project allocated to the San Gabriel Valley Municipal Water District can only be tentatively estimated at the present time, since neither aqueduct capacities, turnout location, maximum annual entitlements for all contracting agencies, nor the design of aqueduct facilities are as yet firmly established. However, based on information now known and on assumed levels of participation in the aqueduct facilities by all probable contractors, cost allocations were made for the district on an assumed maximum annual water entitlement of 25,000 acre-feet. It was further assumed that repayment of the main aqueduct facilities would start in 1963 and that deliveries to the agency would commence in 1972 and build up to the maximum entitlement in year 1990.

Construction Features of State Water Project

Since the San Gabriel Valley Municipal Water District lies at a distance of 20 to 40 miles from the nearest contemplated State Water Facility, local conveyance facilities for the area will be relatively expensive. The selection of the routing of the local distribution system is very involved, both politically and economically, and an extensive study will be required to determine the most advantageous turnout location and the alignment of the facilities. This study will have to be made either by the district itself or by the district in concert with other agencies involved. Based on present knowledge, however, it is expected that the turnouts for the San Gabriel Valley area would be located on the East Branch of the California Aqueduct, either at Little Rock Creek or at the outlet of Devil Canyon Power Plant No. 2.

The major state facilities planned for this area are the Pearblossom Pumping Plant, Cedar Springs Dam and Reservoir, and the Devil Canyon Power Plants. The Pearblossom Pumping Plant would be located about two miles south of the community of Pearblossom and would lift water in the California Aqueduct at about elevation 2,935 feet to about elevation 3,480 feet. Water would then flow by gravity into Cedar Springs Reservoir. Cedar Springs Dam will be built on the West Fork of the Mojave River about one mile downstream from the community of Cedar Springs. The dam approximately 280 feet high, will create a reservoir of about 200,000 acre-feet capacity to be used primarily for regulation, but also for recreation and emergency storage. From the reservoir, a pressure tunnel will convey water four miles through the San Bernardino Mountains to the vicinity of Devil Canyon. The Devil Canyon Power Development will consist of two power plants with the tailrace of the second plant at the mouth of the canyon at about elevation 1,776 feet. The two plants would operate under a total effective head of about 1,636 feet. The route of the proposed State and local distribution system described in this report is shown on Plate 2, "Local Distribution Facilities."

Cost of State Water Project

The construction costs of the California Aqueduct allocated to the San Gabriel Valley Municipal Water District are primarily dependent on the maximum annual water entitlement of the district and the selection of turnout location. As mentioned above, two alternative turnout locations were considered feasible for service to the San Gabriel Valley area. However, for this report, a cost analysis was made only of the Devil Canyon Power Plant No. 2 turnout and Devil Canyon feeder route, since the San

Gabriel Valley Municipal Water District alone does not require sufficient water to justify the Little Rock Creek turnout and tunnel through the San Gabriel Mountains. Preliminary studies by the department indicate that water deliveries of at least 100,000 acre-feet annually would be required to justify construction of a tunnel through the San Gabriel Mountains.

In addition to the capital costs of the transportation facilities, operation, maintenance, power, and replacement costs are separated into two categories and allocated to the district. A minimum operation, maintenance, power and replacement charge is assessed to the district, regardless of water deliveries to the district, and a variable operation, maintenance, power, and replacement charge is levied, based upon the amount of water actually delivered to the district. The maximum amount of these charges, based on a maximum entitlement of 25,000 acre-feet per year, would be about \$102,800 and \$639,700 per year, respectively, in 1990. The final component of cost is the Delta Water Charge, based on the schedule of estimated annual water deliveries included in the agency's water service contract. As of the time of this study, the Delta Water Rate was estimated to range from \$4.99 per acre-foot in the early years of water service to \$6.78 per acre-foot from 1978 through the remainder of the repayment period ending in 2035. This would result in a maximum annual charge to the agency of about \$169,500.

Table 9 indicates the estimated total annual cost components of water service and estimated total of the State Water Project to the San Gabriel Valley Municipal Water District for specific years in the water delivery buildup period to 1990, the year of maximum water delivery. These cost components are shown for the Devil Canyon Power Plant No. 2 turnout location and are based on a continuous flow of water deliveries. These cost data were extracted from the billing data supplied the district in June, 1963.

TABLE 9

ANNUAL COMPONENT COSTS OF WATER SERVICE
FROM THE STATE WATER PROJECT TO THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Year	Estimated	Transportation charge			Delta	Total
	water	Capital ^{1/}	Minimum ^{2/}	Variable ^{3/}		
	delivery		operation	operation		
	in		and	and		
	acre-feet	cost			water	payment
		component	maintenance	maintenance	charge	to State

Tailrace of Devil Canyon Power Plant No. 2 Turnout

1963	--	\$ 12,249	\$ --	\$ --	\$ --	\$ 12,249
1972	10,600	415,870	74,566	193,382	52,894	736,712
1980	17,400	475,835	98,421	314,304	117,972	1,006,532
1990	25,000	481,041	102,836	639,676	169,500	1,393,053

Total allocated construction cost \$10,334,000

- 1/ Annual capital payment would remain at the maximum to 2010 and then taper off to zero in 2036.
- 2/ Minimum operation and maintenance charges are those necessary to maintain the system even though there are no water deliveries to the agency.
- 3/ Variable operation and maintenance charges are those associated with moving water to the contracting agency.

Local Distribution Facilities

In order to distribute water imported from the State Water Project, it will be necessary for the San Gabriel Valley Municipal Water District to provide a distribution system to carry water to the widely scattered portions of the district. It is expected that each city of the district will provide its own local system to serve consumers with water and that these local systems will connect to a primary transmission system either through a secondary distribution system, or through the ground water basin. While the selection of the local distribution system for the San Gabriel Valley area is very involved, and must await the completion of an extensive engineering study, the department

has made preliminary studies of a possible transmission system from the Devil Canyon Power Plant No. 2 turnout location to the Azusa spreading grounds for serving the district. This system, which is described in the following paragraphs, is one that appears to be economical and feasible.

Construction Features of Local Distribution Facilities

The local distribution system studied for this report has been designated, by virtue of the aqueduct turnout location, as the "Devil Canyon Feeder Route." This route, which is shown on Plate 2, would deliver water from the East Branch of the California Aqueduct in the vicinity of Devil Canyon Power Plant No. 2 outlet at about elevation 1,776 feet. A reinforced concrete pressure pipeline approximately 42 miles long would then convey water westerly along the base of the San Gabriel Mountains to the spreading grounds near Azusa. The pipeline would be buried throughout most of the alignment and encased in concrete at streambeds and other difficult sections. Drains, valves, and manholes would be provided at appropriate intervals. The pipeline could be designed for continuous flow or for peaked flow operation with regulation and emergency storage provided at Cedar Springs Reservoir.

Cost of Local Distribution Facilities

Estimates of construction costs for the local conveyance system described above were prepared by the department for a maximum annual entitlement of 25,000 acre-feet. These costs did not reflect the costs associated with local turnout structures and local storage facilities, since the location of turnouts and the amount of terminal storage required for regulation and emergency use are subject to change with changes in design criteria. Since

the entire San Gabriel Valley ground water basin is currently undergoing adjudication proceedings, in which the district is involved, it was thought reasonable to assume that the ground water basin could be utilized for regulation purposes.

The total estimated construction costs of the local distribution system for the San Gabriel Valley Municipal Water District are about \$11,800,000. Assuming a repayment period of 40 years at a five percent interest rate, the annual capital repayment requirement for this system would be \$687,700. Operation costs at the maximum (in 1990, under full delivery of maximum entitlement) would be \$46,100, for a total annual cost in 1990 of \$733,800.

Unit Costs of Water Service

The costs of water service indicated in this chapter have been translated into per acre-foot costs for purposes of comparison with local unit water costs. These costs do not represent the actual cost of water from the State Water Project and local distribution system for any given year, but instead are equivalent unit rates--those costs that, when applied to each acre-foot of entitlement during the full repayment period, will return all costs to the State with appropriate interest. In this report, a repayment period of 50 years and an interest rate of four percent was assumed for facilities financed by the State and a period of 40 years and an interest rate of five percent was assumed for locally financed facilities. Table 10 shows the equivalent unit costs of various components of service from the State Water Project and costs associated with local conveyance facilities. Deliveries of imported water to land holdings in excess of 160 acres were concluded to be relatively unimportant from the type of development expected

in the district's area in the future, and were not accounted for in the analysis of water costs to the area.

TABLE 10

ESTIMATED UNIT COSTS OF WATER SERVICE TO
THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
FROM THE STATE WATER PROJECT

Components of cost	:	Equivalent unit rates, ^{1/} in dollars per acre-foot
<u>State Water Project to</u> <u>Devil Canyon Power Plant No. 2</u>		
Transportation charge		
Capital cost component		\$24.44
Minimum operation, maintenance, power and replacement component		4.81
Variable operation, maintenance, power and replacement component		<u>22.72</u>
Total		\$51.97
Delta Water Charge		<u>6.53</u>
Total of cost components for State Water Project		<u>\$58.50</u>
<u>Local Conveyance Facilities to the</u> <u>Azusa Spreading Grounds</u>		
Estimated operation, maintenance, and replacement component		\$ 2.50
Estimated capital cost component		<u>38.90</u>
Total of cost components for local conveyance facilities		<u>\$41.40</u>
Total of cost components for all water facilities		<u>\$99.90</u>

^{1/} Assumes repayment of State Facilities over 50 years at 4 percent, last year of payment 2035; local facilities repaid over 40 years at 5 percent, last year of payment 2011.

CHAPTER V. ECONOMIC JUSTIFICATION AND FINANCIAL FEASIBILITY

The most important and basic elements to consider relative to the execution of a water service contract between the State and the San Gabriel Valley Municipal Water District are the economic justification of entering into such a contract and the financial capability of the district to perform the contract. Economic justification proves the worth of the proposed water service, whereas financial capability indicates the ability on the part of the district to repay the costs of water importation.

Economic Justification

A project is economically justified if as a minimum the estimated benefits exceed the total economic costs and if each project purpose provides benefits at least equal to its allocated costs. In analyzing the economic justification of a water importation project for urban purposes, definite criteria have not been developed. Often, economic justification has been shown by demonstrating a need for additional water supplies, that alternative sources of water would be more costly, and that the costs of the project are not significantly greater than existing water costs. Where no alternatives are available, economic justification for urban areas has been shown if the cost of water importation is not unreasonably high as compared to the cost of present water sources, the area's economic development would be restricted without additional water supplies, and the repayment of the necessary expenditures for the water supply is financially feasible.

Water service from the State Water Project to the San Gabriel Valley Municipal Water District is contemplated only for urban purposes;

accordingly, the benefits accruing from municipal and industrial water use were compared with project charges in order to determine if the project was economically justified. One method of measuring municipal and industrial benefits is to assume them to be equal to the next cheapest source of water supply. In the present instance, however, the only practical alternative source of water is to join the Metropolitan Water District. Inasmuch as the San Gabriel Valley district has considered and rejected this latter alternative, it will not be analyzed. The possibility of continued overdrafting of the ground water basins has also been rejected because of pending legal limitations on ground water extractions.

Another measure of economic justification is whether the project water can be delivered at costs not unreasonably above present water costs in the area under consideration, and whether the future economic development of the area is dependent upon the receipt of imported water. Under the forecasted conditions of future growth, the San Gabriel Valley Municipal Water District would supply about 56 percent of the urban water needs of its area in 1990 with imported water. The present cost of water production in the district's area was not determined for this report, but the cost of water to the ultimate consumer is presently about \$72 per acre-foot. The cost of water delivered to the district under the proposed system of water importation is estimated to be about \$100 per acre-foot. Since the San Gabriel Valley Municipal Water District presently plans to act only as a wholesaler of imported water, and transmit water to the distributing agencies by ground water recharge, additional costs will be incurred in extracting this water and placing it within the distribution system. While the overall cost of this operation was not estimated, the total cost of imported water to the average

consumer is not expected to be excessively higher than current costs, since it will be integrated into presently developed water systems of the member cities.

The economy and population of the district's area have grown substantially during the past 10 years under current water cost conditions, indicating that the benefits accruing from local water supplies have exceeded the cost of water to users in the area. Since the cost of imported water supplies are not expected to be unreasonably higher than the cost of water from local sources, it is probable that economic development of the area would continue in the future under water costs resulting from water importation and that benefits accruing to the area from water importation would exceed water costs. On this basis, it may be concluded that water importation by the San Gabriel Valley Municipal Water District from the State Water Project for urban purposes would be economically justified.

Financial Feasibility

Financial feasibility is a showing that the public credit of an agency contracting with the State would be strong enough to reasonably support and repay the long-term debt which it must necessarily undertake in order to finance water facilities under the contract. Since the cost of water service facilities to the San Gabriel Valley Municipal Water District will be relatively high, it must be shown that the district would not be unduly burdened by its overall debt during the project repayment period. Furthermore, it must be shown that the methods of obtaining funds for debt repayment are practical and reasonable.

Present and Projected Assessed Valuation

Assessed valuations of property in the four cities encompassed by the San Gabriel Valley Municipal Water District have increased steadily during the

past six years as a result of population and economic growth and because of inflationary trends, reaching \$240,561,000 in 1962-63. This valuation represents an estimated market value of about \$908,838,000. Table 11 shows the growth of assessed valuation in the district from 1957 to the present, based on data obtained from the County Assessor's Office.

TABLE 11

HISTORICAL ASSESSED VALUATIONS IN THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Year	Total assessed valuation	Increase over previous year
1957-58	\$178,705,000	-
1958-59	191,704,000	7.3%
1959-60	198,232,000	3.4
1960-61	219,176,000	10.6
1961-62	228,818,000	4.4
1962-63	240,561,000	5.1

Assessed valuations of property in the four cities of the district will, no doubt, continue to increase in the future, as they have in the past, and for purposes of analyzing the financial feasibility of the district to pay for water service from the State Water Project, it was necessary to make projections of the district's assessed valuation. These projections were conservatively made, based on the assumption that assessed valuation per capita in each of the four cities would remain at substantially their current levels during the next 30 years. This method of forecasting eliminates considerations of economic inflationary trends, and its validity for use is justified by an analysis of per capita assessed valuation data over the past several years. In each of the four cities in

the district, except for Monterey Park, assessed valuation per capita has increased in the past four years at about the same rate as inflationary effects on the economy have increased living costs. The rate of increase in Monterey Park was considerably higher, but that increase was due primarily to an extensive land development program in the city's area that resulted in greatly increased assessed valuations but which was not accompanied by a concomitant increase in population. Table 12 below indicates the department's estimate of current per capita assessed valuation in each of the four cities of the San Gabriel Valley Municipal Water District.

TABLE 12

PRESENT PER CAPITA ASSESSED VALUATIONS IN THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

City	Population ^{1/}	Assessed Valuation ^{2/}	Assessed valuation per capita ^{3/}
Alhambra	57,900	\$113,576,000	\$1,960
Monterey Park	43,400	70,627,000	1,630
Azusa	22,900	39,910,000	1,740
Sierra Madre	10,500	16,448,000	1,570

^{1/} As of October 1, 1962 (estimates of Los Angeles County Regional Planning Commission).

^{2/} For fiscal year 1962-63.

^{3/} Rounded to nearest ten dollars.

The foregoing estimates of per capita assessed valuations were projected into the future, and estimates of total assessed valuation in the San Gabriel Valley Municipal Water District to 1990 were computed by applying the appropriate per capita valuations to projections of population in each of the four cities of the district. These total assessed valuation estimates are shown in Table 13.

TABLE 13

PRESENT AND PROJECTED ASSESSED VALUATIONS
IN THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

City	Assessed valuations (\$000)				
	1959-60	1962-63	1969-70	1979-80	1989-90
Alhambra	\$101,346	\$113,576	\$132,300	\$141,700	\$146,400
Monterey Park	46,610	70,627	91,300	97,000	98,300
Azusa	32,780	39,910	48,700	55,300	61,900
Sierra Madre	<u>14,496</u>	<u>16,448</u>	<u>19,300</u>	<u>22,800</u>	<u>23,100</u>
Total	<u>\$195,232</u>	<u>\$240,561</u>	<u>\$291,600</u>	<u>\$316,800</u>	<u>\$329,700</u>

Present and Projected Bonded Indebtedness

The San Gabriel Valley Municipal Water District, as a political entity, has no bonded indebtedness at the present time. However, the area encompassed by the district's boundaries has a current bonded indebtedness of \$21,756,000, nine percent of its assessed valuation. School bonds account for about 68 percent of the total. Table 14 shows the current bonded indebtedness for which property owners in the San Gabriel Valley Municipal Water District are responsible.

TABLE 14

PRESENT BONDED INDEBTEDNESS IN THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
BY TYPE OF DISTRICT

Type of district	: Bonded debt as of June 30, 1962
Los Angeles County	\$ 1,185,000
County Flood Control District	3,943,000
Cities	1,209,000
Schools	
Elementary Schools	4,572,000
High Schools	4,694,000
Unified Schools	4,717,000
Junior Colleges	793,000
Sanitary Districts	<u>643,000</u>
Total	<u>\$21,756,000</u>

The ratio of bonded debt to assessed valuation in the San Gabriel Valley Municipal Water District has fluctuated moderately in the past few years, ranging from 8.2 percent in 1958 to a high of 9.8 percent in 1961. From the data available for the past six years, it appears that bonded debt in the district's area is not increasing at a significantly faster rate than assessed valuation. Table 15 shows historical bonded indebtedness and its relationship to assessed valuation in the San Gabriel Valley Municipal Water District.

TABLE 15

HISTORICAL BONDED INDEBTEDNESS IN THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Year	Bonded indebtedness	Assessed valuation	Debt as a percentage of valuation
1957	\$14,303,000	\$154,395,000	9.3%
1958	14,691,000	178,705,000	8.2
1959	16,305,000	191,704,000	8.5
1960	17,764,000	198,232,000	9.0
1961	21,546,000	219,176,000	9.8
1962	21,756,000	228,818,000	9.5

Although it is difficult to estimate the extent to which the district's area will incur bonded indebtedness in the future, it was assumed for the purposes of this report that the ratio of bonded debt to assessed valuation would increase to ten percent by 1970 and remain at that level for the next two decades. Although this assumed ratio is slightly higher than has been experienced in the area in the past several years, it was thought to be reasonable for purposes of conservative analysis. This percentage was applied to the area's projected assessed valuation in order to estimate future bonded indebtedness in the district's area (other than debt arising from the execution by the district of a water service contract with the State). The estimated future bonded debt is shown in Table 16.

TABLE 16

PRESENT AND PROJECTED BONDED INDEBTEDNESS
IN THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Year	Bonded indebtedness	Percentage of assessed valuation
1962	\$21,756,000	9.5%
1970	29,160,000	10.0
1980	31,680,000	10.0
1990	32,970,000	10.0

Financing Future Obligations

The determination of financial feasibility requires an analysis of several interrelated factors, including the amount of money required to pay the district's allocated share of costs, the probable repayment schedule necessary, the present and future assessed valuation of the district, the present and future ratio of bonded debt to assessed valuation, tax rates prevalent in the area, and the additional tax rates that might be incurred by undertaking a water importation project.

For this report, an investigation was made of many facets of the district's present financial situation, in order to provide a basis for analyzing its future financial position. The data gathered in this investigation are presented in Appendix A of this report, entitled "Credit Analysis of the San Gabriel Valley Municipal Water District." The data in this appendix pertain to historical and current conditions and do not attempt to measure the impact on the district's area of the proposed costs of imported water.

Comparison of Assessed Valuations to Bonded Debt. The present bonded indebtedness of the area in the San Gabriel Valley Municipal Water District is about 9.5 percent of its assessed valuation. This compares with a ratio of about 25 percent in the City of Los Angeles and 17 percent in the County of Los Angeles (not including the amount of indebtedness attributable to the contract between the State and The Metropolitan Water District of Southern California). The district's ratio of debt to valuation is expected to increase to ten percent by 1970 and to be increased still further by the debt which it will incur for service from the State Water Project.

From the schedules of estimated allocated construction costs, costs of local conveyance facilities, and assessed valuations, the total debt outstanding in any one year on the transportation portion of the State Water Project and local distribution facilities was computed as a percentage of assessed valuation. These data are shown in Table 17.

TABLE 17

SUMMARY OF CAPITAL REPAYMENT OBLIGATIONS
RESULTING FROM WATER SERVICE TO THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Year:	Assessed valuation (000's)	Outstanding debt					
		Local distribution facilities		Transportation portion of State Water Project		Total attributable to water service	
		Amount	Percent of assessed valuation	Amount	Percent of assessed valuation	Amount	Percent of assessed valuation
		(000's)	(000's)	(000's)	(000's)	(000's)	(000's)
1972	\$296,600	\$11,598	3.9%	\$8,831	3.0%	\$20,429	6.9%
1980	316,800	10,573	3.3	9,229	2.9	19,802	6.2
1990	329,700	8,766	2.7	8,055	2.4	16,821	5.1

In the year of highest projected debt ratio, occurring in about 1971, the total obligation for water service debt, shown in Table 17, and other public debt would be about 16.5 percent. This ratio is considerably less than that currently existing in the City of Los Angeles, excluding the effect of the debt arising from the Metropolitan Water District's water service contract with the State. Thus, even at the maximum, the area's ratio of debt to valuation would appear to be reasonable. The projected debt ratio would continually decline each year throughout the project repayment period after the maximum year.

Levels of Ad Valorem Taxation. Property tax rates in the San Gabriel Valley Municipal Water District vary from place to place and city to city. Considering total assessed valuations and tax levies, however, it was possible to compute the weighted tax rates in the area for the past several years. The weighted average tax rate in the district's area is currently about \$8.22 per \$100 assessed valuation.

Tax rates in the San Gabriel Valley Municipal Water District have tended to increase in the past several years, in line with the trend of most California areas. Table 18 indicates the weighted average tax rates and their component parts in the district's area for the past five years.

TABLE 18

WEIGHTED AVERAGE TAX RATE COMPONENTS IN THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

: Weighted average tax rate (per \$100 assessed valuation)						
Year	General	Cities	School	Special	San Gabriel	Total tax
:	county rate:	:	districts	districts	Valley MWD :	rate
1957-58	\$1.925	\$1.481	\$3.403	\$0.411	\$ -	\$7.220
1958-59	1.973	1.475	3.633	.378	-	7.459
1959-60	2.086	1.527	3.928	.479	-	8.020
1960-61	2.060	1.518	3.950	.459	0.010	7.997
1961-62	2.059	1.536	4.159	.449	.020	8.223

The standard repayment schedule specified in the water supply contract executed on November 3, 1962, provides for repayment of the district's share of capital costs of the transportation facilities of the State Water Project. Under this schedule, the San Gabriel Valley Municipal Water District would be required to make an initial payment to the State in 1964 of about \$36,000 for its share of capital costs. The amount paid would increase each year until 1986 when an annual payment of \$481,000 would be required. Payments would then remain constant from 1986 to 2012, after which time they would decline until the capital costs would have been fully repaid in 2036.

The local distribution system for the district's area would most likely be financed by the issuance and sale of bonds by the district. These bonds would probably be repaid from revenues derived from ad valorem taxation. From estimates of the probable cost of construction of the local distribution system (see Chapter IV), a tentative repayment schedule was constructed. This schedule, although not intended to be a definite plan of capital cost repayment for local distribution facilities, provided a basis for estimating the necessary tax rates needed for the repayment of the cost of these facilities.

The annual repayment requirements, as estimated for both the transportation portion of the State Water Project and the local distribution facilities, were compared with projections of assessed valuations of the district so that the tax rates necessary for capital repayment could be determined. This was done in order to make certain that the necessary rate of taxation would not place an unreasonable burden on the taxpayers of the area in the event that all capital repayment obligations were collected in this manner. The tax rates computed as necessary for capital repayment of

State and local facilities are shown in Table 19. The maximum tax rate, not shown in the table, would occur during the years 1974 to 1976 when it would amount to about \$0.372 per \$100 assessed valuation. Assuming future tax levels in the district to be substantially the same as those currently in force, the maximum total tax rate during this period would be about \$8.60 per \$100 assessed valuation. This total compares with a county-wide average tax rate for Los Angeles County for 1961-62 of about \$9.14.

TABLE 19

TAX RATES NECESSARY FOR CAPITAL REPAYMENT OF LOCAL
DISTRIBUTION FACILITIES AND STATE WATER PROJECT
BY THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Year	Assessed valuation (000's)	Capital repayment					
		Local distribution facilities		State Water Project		Total	
		Amount	Tax	Amount	Tax	Amount	Tax
		(000's)	rate ^{1/}	(000's)	rate ^{1/}	(000's)	rate ^{1/}
1972	\$296,600	\$688	\$0.232	\$416	\$0.140	\$1,104	\$0.372
1980	316,800	688	.217	476	.150	1,164	.367
1990	329,700	688	.209	481	.146	1,169	.355

^{1/} Dollars per \$100 assessed valuation.

For purposes of this analysis, it was assumed that capital repayment for both State and local water facilities would be accomplished through ad valorem taxation, and that other ad valorem property taxes would remain at substantially current levels in the future. This latter assumption was made in order to discount the effect of inflationary tendencies on the economy. Although tax rates have been rising in recent years, due mainly to the influence of inflationary trends, it was assumed that tax rates would

remain relatively stable in the future, since future price levels cannot be predicted with any certainty. Consideration was given to these projected tax rates and also to the ratio of bonded and water service contract debt to future assessed valuations under conditions of water importation. These tax rates and debt ratios were compared with those in communities in similar circumstances in other areas, and from these considerations and comparisons it was concluded that the San Gabriel Valley Municipal Water District would have the financial capability of successful performance of its obligations under a water service contract with the State, to the extent of 25,000 acre-feet of annual water delivery as a maximum settlement.

CHAPTER VI. CONCLUSIONS

Analysis of the data gathered and presented in this report has led to the following conclusions:

1. The area within the San Gabriel Valley Municipal Water District has the potential for substantial population and economic growth, and external demographic pressures indicate a high probability for large increases in population and employment if sufficient water supplies are available in the future.

2. The water supplies of usable quality available in the area are not sufficient to satisfy its future requirements and, therefore, the area's future growth will be seriously restricted unless a supply of supplemental water is made available.

3. The San Gabriel Valley Municipal Water District is empowered by its enabling legislation to enter into contracts with the State for the importation of water supplies from the State Water Project.

4. The area encompassed by the water district will have an economic demand for water from the State Water Facilities of about 25,000 acre-feet per year by the year 1990.

5. The financial position of the San Gabriel Valley Municipal Water District is such that the increased debt and taxation requirement necessitated by the execution and performance of a water service contract with the State would not impose an unreasonable financial burden on the district.

6. Financing the construction of necessary local conveyance facilities, in addition to the debt required for a contract with the State, would not increase the district's total ratio of debt obligations to assessed valuation above the levels prevailing in other portions of Southern California.

7. The San Gabriel Valley Municipal Water District has the ability, the necessity, the economic justification, and the financial feasibility required to enter into a contract with the State of California for the service of water from the State Water Project.

AREA OF INVESTIGATION



TION MAP

Scale of Miles
0 40 80

LEGEND

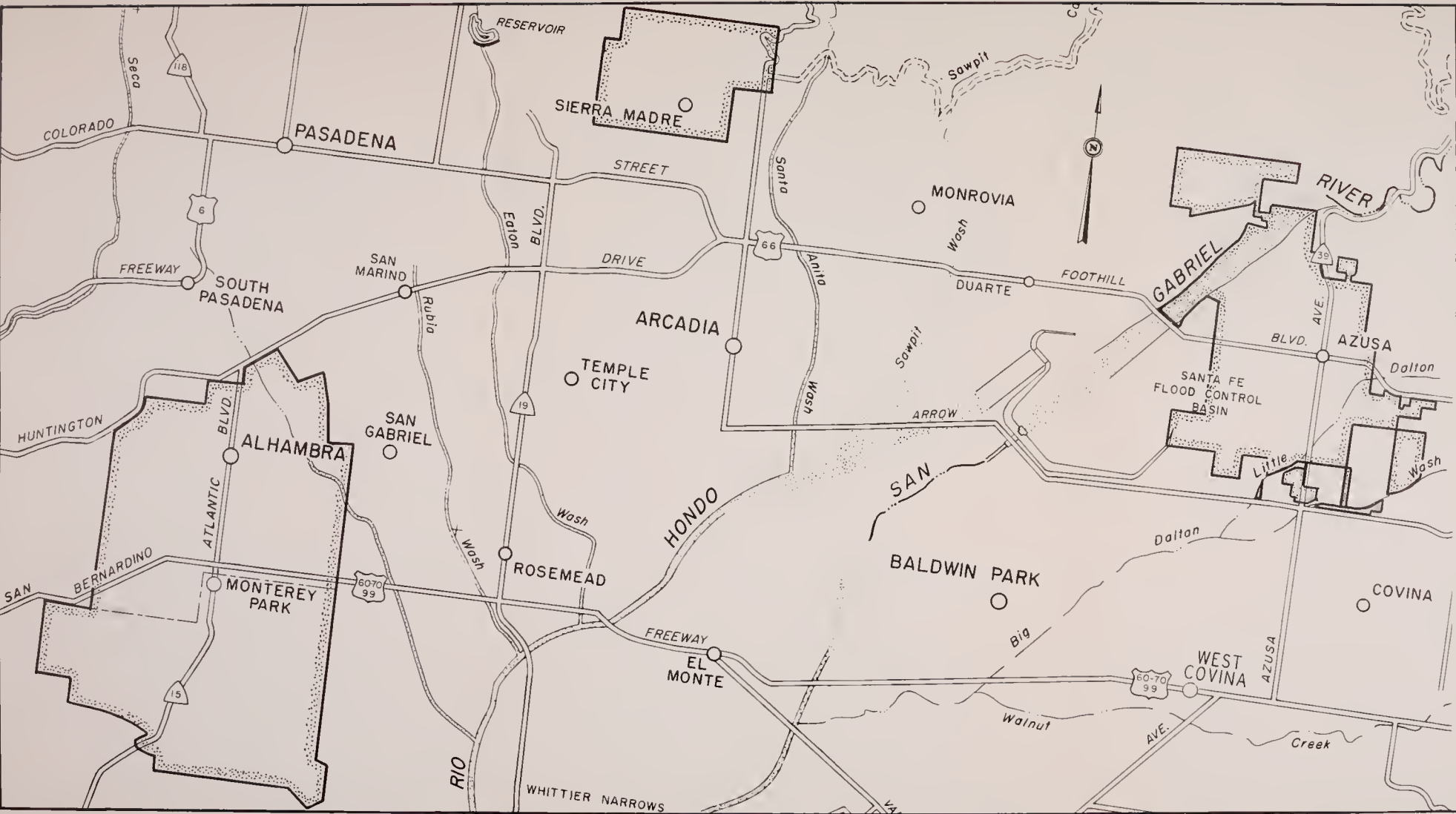
DISTRICT BOUNDARY

OF CALIFORNIA
AGENCY OF CALIFORNIA
OF WATER RESOURCES
ERN DISTRICT

Y OF SERVING THE
MUNICIPAL WATER DISTRICT
STATE WATER PROJECT

N MAP AND
S OF DISTRICT

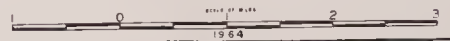
Scale of Miles
0 2 3
1964



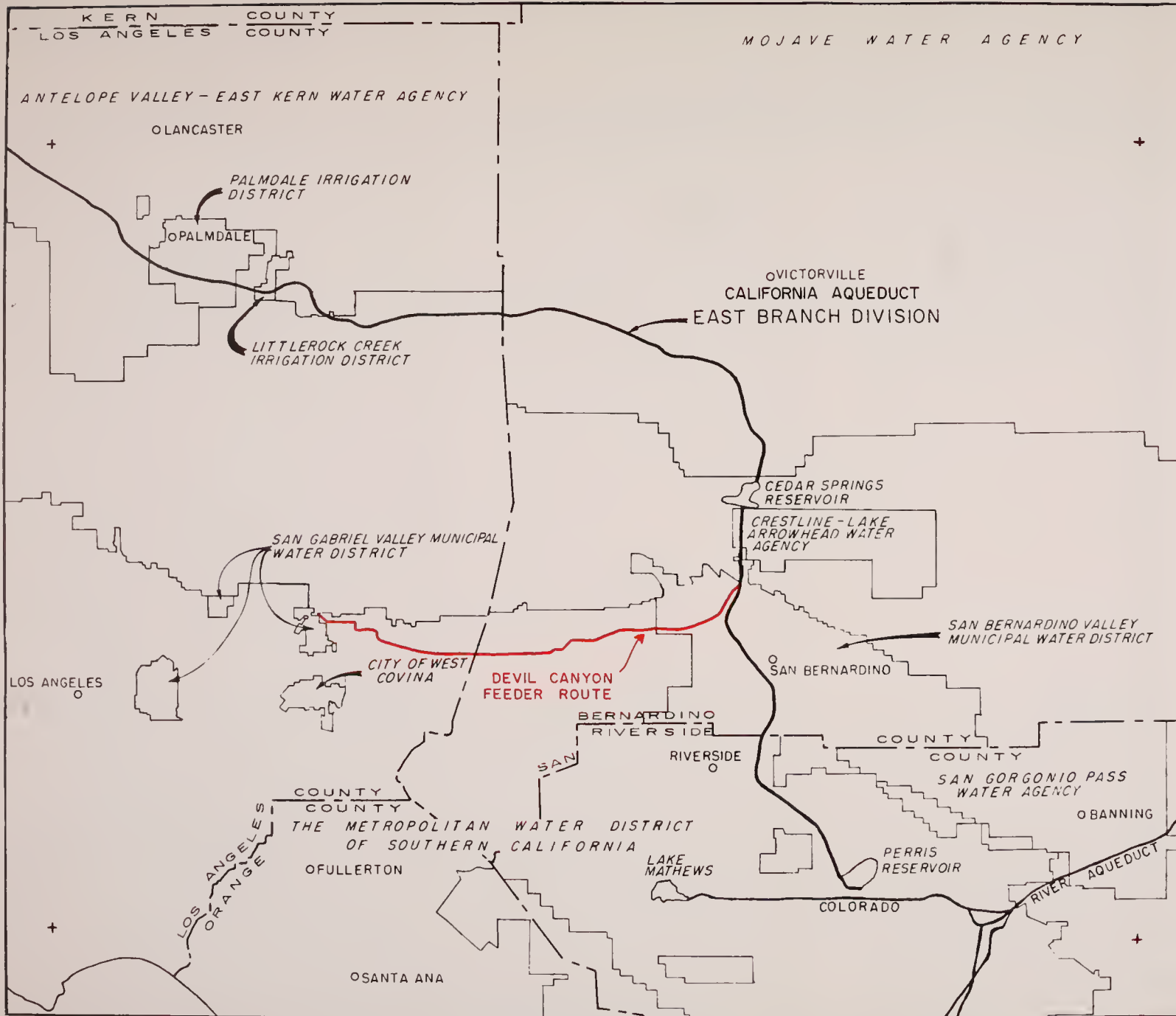
LEGEND
DISTRICT BOUNDARY

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
FEASIBILITY OF SERVING THE
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
FROM THE STATE WATER PROJECT

LOCATION MAP AND
BOUNDARIES OF DISTRICT



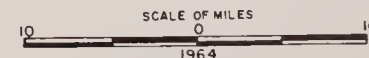




STATE OF CALIFORNIA
 THE RESOURCES AGENCY OF CALIFORNIA
 DEPARTMENT OF WATER RESOURCES
 SOUTHERN DISTRICT

FEASIBILITY OF SERVING THE
 SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
 FROM THE STATE WATER PROJECT

LOCAL DISTRIBUTION FACILITIES



APPENDIX A
CREDIT ANALYSIS OF THE SAN GABRIEL VALLEY
MUNICIPAL WATER DISTRICT

APPENDIX A

CREDIT ANALYSIS OF THE SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

A. Statement of Debt of the San Gabriel Valley Municipal Water District

1. Net Direct Debt, as of June 30, 1962 (full faith and credit)
 - a. Bonds: none
 - b. Floating debt: none
 - c. Total debt: none
2. Special Obligations, as of June 30, 1962 (not full faith and credit):
none
3. Limitation on Debt
 - a. Promissory notes: Notes issued to finance the construction of administrative offices or the acquisition of land for district purposes are limited to an annual interest rate of six percent and a maturity of ten years. The total amount of such notes outstanding at any one time may be at least equal to \$50,000, but may not otherwise exceed the lesser of either \$500,000 or one percent of the assessed valuation of taxable property in the district. Notes issued for other purposes must mature within three years from the date of their issuance and may not bear interest at a rate greater than six percent per year. The total amount of such notes outstanding at any one time may be at least equal to \$75,000 but may not exceed the lesser of \$1,000,000 or two percent of the assessed valuation of taxable property in the district.
 - b. Bonds: Bonds may not bear an interest rate of more than five percent per year, and maturity may not exceed 40 years.

c. Applicable Statutes: Municipal Water District Act of 1911,
Sections 12 and 15 (promissory notes), and Section 15 (bonds).

4. Amount of Bonds Authorized but Unissued: none.

5. Utilities Operated by the District (other than water service): none.

B. Debt of Overlapping, Coterminous, and Underlying Political Units

Name and character of unit bearing bonded indebtedness	:	Net debt	:	Net debt assignable to the agency's area	:	Date of Statement
	:		:	Percent : Amount	:	
Los Angeles County		\$ 60,893,000		1.95% \$ 1,185,361		6-30-62
Cities						
Alhambra		401,000		100.00 401,000 ^{1/}		"
Azusa		7,500		98.51 7,388		"
Monterey Park		784,000		99.29 778,453 ^{2/}		"
Sierra Madre		22,750		100.00 22,750		"
County Flood Control		205,151,500		1.92 3,942,643		"
County Sanitation Districts						
No. 2		240,000		8.12 19,481		"
No. 15		2,197,000		3.14 68,985		"
No. 16		426,000		23.27 99,132		"
No. 22		4,230,000		10.77 455,496		"
School Districts ^{3/}						
Alhambra		4,224,108		99.88 4,219,158		"
Garvey		1,439,000		24.47 352,162		"
San Gabriel		1,108,000		.05 590		"
Alhambra City High		7,090,000		66.20 4,693,748		"
Citrus Junior College		1,452,874		35.97 522,615		"
Pasadena City Junior College		7,262,000		3.72 270,028		"
Arcadia Unified		5,970,000		.59 35,362		"
Azusa Unified		5,997,012		59.88 3,590,798		"
Duarte Unified		2,049,156		.11 2,212		"
Montebello Unified		14,375,000		5.40 776,190		"
Pasadena Unified		6,880,000		4.54 312,761		"
Total Debt				\$21,756,313		

- 1/ Does not include \$176,000 in Waterworks Bonds or \$8,000 in off-street Parking Revenue Bonds which are wholly self-supporting.
- 2/ Does not include \$420,000 in Water Bonds which are wholly self-supporting.
- 3/ As of May 11, 1962, an additional \$8,892,400 was owed by School Districts to the State School Building Aid Program.

C. Summary of Full Faith and Credit Debt of San Gabriel Valley Municipal Water District and Other Political Entities

Type of debt :	Outstanding debt as of June 30th				
	1958	1959	1960	1961	1962
Net bonded debt	\$ 0	\$ 0	\$ 0	\$ 0	0
Net floating debt	0	0	4,000	0	0
Overlapping, etc. debt	<u>14,691,320</u>	<u>16,304,597</u>	<u>17,763,560</u>	<u>21,546,426</u>	<u>21,756,313</u>
Total debt	<u>\$14,691,320</u>	<u>\$16,304,597</u>	<u>\$17,767,560</u>	<u>\$21,546,426</u>	<u>\$21,756,313</u>

D. Default Record: There has been no default either in the payment of principal or interest, by either the county or by any overlapping, coterminous or underlying taxing district in recent years.

E. Assessed Valuations of Property in the San Gabriel Valley Municipal Water District

1. Valuation by type of property :	Valuation (\$000)				
	1957-58	1958-59	1959-60	1960-61	1961-62
Secured property	\$141,170	\$145,439	\$151,734	\$168,997	\$176,521
Unsecured property	11,676	15,682	16,165	18,700	19,629
Utilities	<u>25,859</u>	<u>30,583</u>	<u>30,333</u>	<u>31,479</u>	<u>32,668</u>
Total assessed value	<u>\$178,705</u>	<u>\$191,704</u>	<u>\$198,232</u>	<u>\$219,176</u>	<u>\$228,818</u>

2. Estimated Market Value of Property in the District

1957-58	\$561,205,000
1958-59	741,002,000
1959-60	778,183,000
1960-61	868,525,000
1961-62	869,230,000

3. Assessment Ratio (proportion of market value): State Board of Equalization estimates of the district's assessment ratio are shown below. Note that these do not apply to public utilities, which are assessed at 50 percent of market value.

E. Assessed Valuations of Property in the San Gabriel Valley Municipal Water District (continued)

1957-58	30.0%
1958-59	23.7
1959-60	23.4
1960-61	23.3
1961-62	24.4

4. Important Tax Exempt Property in the District. The most important parcels of land exempt from property taxes are the parks, educational institutions, and public buildings owned by the State of California, the County of Los Angeles, and the four cities within the district.
5. Concentrations of Valuable Property Just Outside the Area. The San Gabriel Valley Municipal Water District is surrounded by other portions of the Los Angeles Metropolitan Area which have a substantial amount of property wealth.
6. Ten Largest Taxpayers in the Area. The two largest taxpayers in the district, the Aerojet-General Corporation and the Lucky Lager Brewing Company, had a total assessed valuation of \$7,259,150 during the 1961-62 fiscal year. The assessed valuation of the next eight largest taxpayers, amounted to \$3,821,810 during the same period. Thus, these ten firms had a total assessed valuation (upon which taxes are levied) of \$11,080,960 or less than five percent of the total assessed valuation of the district.

F. Property Taxes in the San Gabriel Valley Municipal Water District

1. Tax rate components	Weighted average tax rates in dollars per \$100 assessed valuation				
	1957-58	1958-59	1959-60	1960-61	1961-62
County rate	\$1.93	\$1.97	\$2.08	\$2.06	\$2.06
Cities	1.48	1.48	1.53	1.52	1.53
School districts	3.40	3.63	3.93	3.95	4.16
Special districts	.41	.38	.48	.46	.45
S.G.V.M.W.D. ^{1/}	--	--	--	.01	.02
Total rate	<u>\$7.22</u>	<u>\$7.46</u>	<u>\$8.02</u>	<u>\$8.00</u>	<u>\$8.22</u>

1/ San Gabriel Valley Municipal Water District.

2. Assessment Roll. Taxes for all districts are levied from the same assessment roll.

3. Legal Limits on Tax Rates (in dollars per \$100 assessed valuation)

- | | | |
|---|----------|--|
| a. <u>Flood Control district</u> | \$0.15 | Plus taxes for bonds and other special assessments. No limit for drainage improvement. |
| b. <u>Sanitation districts</u> | No limit | Sufficient to pay interest and principal on bonds and operating costs of the district. |
| c. <u>School districts</u> | \$2.00 | Through junior college. Increased rates may be allowed by California Education Code. |
| d. <u>San Gabriel Valley Municipal Water District</u> | No limit | Sufficient to pay interest and principal on bonds and operating costs of the district. |

4. Collection of Municipal Taxes by the County. The four cities within the San Gabriel Valley Municipal Water District have authorized the county to levy and collect city taxes. After property has been assessed by the county, the legislative body of each city fixes the tax rates required on each \$100 assessed valuation. County officials then compute and collect the city taxes in the same manner as county taxes and forward the revenues to the treasurer of each city.
5. Taxes by Classification of Property. Tax rates levied by the county for special districts do not have a common tax base. Tax rates for the Flood Control District and Sanitation Districts are levied only against land and improvement valuations. With few exceptions, tax rates for school districts are levied against all property valuations, i.e., land, improvements, and personal property. Municipal taxes collected by the county are levied, according to rates fixed by each city's governing body, in nearly every instance, on all taxable property in the city.
6. Division of Tax Rates into Separate Levies. Tax rates for the county and for the following special districts are classified into the various components shown below:
- | | |
|---------------------------------------|--|
| <u>County tax rate:</u> | General fund, interest and sinking fund, exploitation, and exposition. |
| <u>County flood control district:</u> | General fund, interest, and sinking fund. |
| <u>Sanitation Districts:</u> | Interest and sinking fund, maintenance, refuse disposal. |
| <u>School tax rates:</u> | General funds, bonds, junior college tuition, county school service. |

G. Record of Tax Collections on Property in the San Gabriel Valley
Municipal Water District

1. : Fiscal : year :	Amount ^{1/} levied :	Cash collections in year of levy : Amount : Percent :	Uncollected at end of fiscal year : Amount : Percent :
1960-61	\$ 3,050,486	\$ 3,020,154 99.0%	\$ 30,332 1.0%
1959-60	2,785,504	2,758,281 99.0	27,223 1.0
1958-59	2,584,667	2,564,283 99.2	20,384 0.8
1957-58	2,477,771	2,454,826 99.1	22,945 0.9
1956-57	2,173,234	2,155,554 99.2	17,680 0.8
1955-56	1,956,268	1,938,457 99.1	17,811 0.9
1954-55	1,821,619	1,804,430 99.0	17,189 0.9
1953-54	1,597,733	1,580,795 98.9	16,938 1.1
1952-53	1,500,745	1,487,492 99.1	13,253 0.9
1951-52	1,326,370	1,313,575 99.0	12,795 1.0
1950-51	1,247,905	1,233,587 98.9	14,318 1.1
	<u>\$22,522,302</u>	<u>\$22,311,434</u> <u>99.1%</u>	<u>\$210,868</u> <u>0.9%</u>

^{1/} Against secured valuations only.

2. When Taxes are Due

a. Due date: One-half of tax levy due each on November 1st and February 1st.

b. When delinquent: December 10th and April 10th following due date.

c. Penalties: Penalties attach as of the delinquent date, to the extent of six percent of each delinquent installment.

3. Tax Sales: Tax sales of delinquent property are regularly held by the county.

4. Estimated Tax Delinquency: Each year the county auditor estimates a tax payment delinquency which is used for budget purposes and for computing necessary tax levies and rates for the ensuing year. The estimate is generally five percent of the total levy.

5. Collection of Taxes: The district does not collect its own taxes or the taxes of other taxing districts. The county tax collector collects all taxes.

H. Receipts and Disbursements of the San Gabriel Valley Municipal Water District

Income and expense	Fiscal year ^{1/}		
	1959-60	1960-61	1961-62
<u>Cash, beginning of period</u>	\$ 0	\$ 2,043.55	\$ 7,257.20
<u>Borrowings</u>	4,000.00	0	0
<u>Receipts</u>			
Tax levies	0	19,554.67	30,063.47
Water sales	0	0	0
Other continuing revenue	0	0	0
Interest	0	42.35	0
Total receipts	\$4,000.00	\$19,597.02	\$30,063.47
<u>Total Cash Plus Receipts</u>	<u>\$4,000.00</u>	<u>\$21,640.57</u>	<u>\$37,320.67</u>
<u>Disbursements</u>			
Operating expenses	\$1,881.07	\$10,383.37	\$20,729.05
Capital and emergency expenses	75.38	0	0
Debt service	0	4,000.00	0
<u>Total Disbursements</u>	<u>\$1,956.45</u>	<u>\$14,383.37</u>	<u>\$20,729.05</u>
<u>Cash, End of Period</u>	<u>\$2,043.55</u>	<u>\$ 7,257.20</u>	<u>\$16,591.62</u>

^{1/} July 1 to June 30 except for the latest year which extends from July 1, 1961 to May 11, 1962.

- I. Sinking Fund Operations. There are no sinking funds being operated by the agency at this time.
- J. Future Debt Service Requirements. None exist for the district as an entity at this time.

K. Management and Services

1. Fiscal Policies. The agency has been in existence such a short time that no valid judgment can be made of its fiscal policies.
2. General Character and Efficiency of the Management. The management has been effective in its efforts to establish the district and in its negotiations with the State for a water service contract.
3. Services Performed by the District. Thus far, the agency has acted only as a disseminator of information and as a negotiator for a water service contract with the State. Upon receiving imported water, it will act as a wholesaler of water to distributing agencies in the district.

L. Economic Background

1. Land Area. The district encompasses about 15,550 acres of land in the San Gabriel Valley portion of Los Angeles County.
2. Population

<u>Year</u>	<u>Population</u>
1940	52,256
1950	90,069
1960	122,857

L. Economic Background (continued)

3. Employment^{1/}

Industry Group	:	Employment as of April 1960
Mining		123
Construction		2,708
Manufacturing		14,307
Transportation, communication, utilities		4,250
Wholesale and retail trade		9,835
Services		6,750
Government		6,411
All other		<u>5,755</u>
Total		<u>50,139</u>

^{1/} Source: United States Census. Data represent jobs held by residents working both in and outside the San Gabriel Valley Municipal Water District.

4. Industry

a. Principal Products

- (1) Rocket engines
- (2) Fabricated metals
- (3) Machinery
- (4) Beverages
- (5) Building materials
- (6) Pharmaceuticals

b. Large Industrial Plants in the Area (in order of assessed valuation)

- (1) Aerojet-General Corporation
- (2) Lucky Lager Brewing Company
- (3) Yuba Consolidated Industries
- (4) Azusa Rock and Land Company
- (5) Wheelcraft
- (6) American Cyanamid Co.
- (7) Reichold Chemicals

5. Trade. Retail trade has expanded rapidly in recent years to keep pace with the demands of a growing population. Many nationally known retail outlets and locally owned shops have been established in the business sections of the district and in centralized shopping centers offering consumers a wide selection of merchandise for everyday needs.
6. Transportation. The area is served by the Southern Pacific, Santa Fe, and Union Pacific Railroads, two transcontinental bus lines, and dozens of trucking companies. The San Bernardino and Long Beach freeways connect the district to neighboring parts of the Los Angeles Metropolitan area and to other parts of the nation. Although several municipal and interurban bus lines operate within the district, its residents are highly dependent on automobiles for local transportation.
7. Natural Resources. Although large deposits of mineral wealth are found in other portions of Southern California, there are no significant mineral deposits within the district itself.

M. Financial Data for the San Gabriel Valley Municipal Water District

1. General Data

a. Population

(1) 1950	90,100
(2) 1960	122,900

b. Assessed valuation

(1) Amount (1959-60)	\$198,231,770
(2) Basis of assessment	50.0% Utilities
	23.4% All other property
(3) Est. full valuation	\$778,183,000

1. General Data (continued)

c. <u>Bonded debt</u> (6-30-60)	\$ 17,763,560
d. <u>Tax collections</u> (1959-60)	\$ 2,758,281

2. Per Capita Data

a. <u>Assessed valuation</u>	\$ 1,614
b. <u>Estimated full valuation</u>	\$ 6,332
c. <u>Bonded debt</u> (6-30-60)	\$ 144
d. <u>Tax collections</u> (against secured valuations only)	\$ 22

3. Ratios

a. Tax supported bonded debt as a percentage of:

(1) Assessed valuation	9.0%
(2) Estimated full valuation	2.3
(3) Tax Collections	644.0

b. Percentage increase in:

(1) Population, 1950 to 1960	36.4%
(2) Assessed valuation, 1957-58 to 1961-62	28.0
(3) Bonded debt, 1958 to 1962	48.1
(4) Tax collections, 1950-51 to 1960-61	144.8

THIS BOOK IS DUE ON THE LAST DATE
STAMPED BELOW

RENEWED BOOKS ARE SUBJECT TO IMMEDIATE
RECALL

LIBRARY, UNIVERSITY OF CALIFORNIA, DAVIS

Book Slip-50m-12,'64(F772s4)458



3 1175 02468 1614

354269

California. Dept.
of Water Resources.
Bulletin.

PHYSICAL
SCIENCES
LIBRARY

TC824

C2

A2

no.119:6

C.2

LIBRARY
UNIVERSITY OF CALIFORNIA
DAVIS

Call Number:

354269

California. Dept. of
Water Resources.
Bulletin.

TC824

C2

A2

no.119:6

